

REMARKS

Reconsideration of the application is respectfully requested.

I. Status of the Claims

Claims 1, 3-5, 8, 11 and 12 are pending. Claims 2, 6, 7, 9 and 10 are cancelled. Claim 1 is presently amended and new claim 13 is added. No new matter is added. Support for the amendments may be found, for example, with reference to Applicants' specification at page 14, lines 10 – 21 and page 15, Table 1.

II. Claim Interpretation

The Examiner states that claims 1, 3-5, 8 and 11 should be read as reciting crystal sizes of 30 nm or greater with no upper limit. Based on the use of "including" and "particles" in claim 1, the Examiner states that the claims require the presence of only two particles having the recited crystal characteristics.

Claim 1 has been amended to state that each particle is formed as a collection of multiple crystal grains having an average size of between 10 and 20 microns and each crystal grain includes multiple crystals having an average size, as determined by x-ray diffraction, of at least 30 nm in order to clarify that there are multiple particles having the recited crystal grain and crystal characteristics.

III. Rejections under 35 U.S.C. § 112, first paragraph

Claims 1, 3-5, 8 and 11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner states that the claims recite “crystals” having “an average size of ...at least 30 nm,” therefore, without an upper limit, the crystal size may impermissibly exceed the claimed upper limit of the crystal grain size.

One of ordinary skill in the art would have understood that the size limitations of the crystal grain size of 10 to 20 microns would inherently limit the crystal size, because crystals are contained within crystal grains. The limitations of the size of the crystal grain limit the size of the crystal particles. As the Examiner correctly points out, the crystal size cannot exceed the crystal grain size.

Amended claim 1 now recites particles that are formed from a collection of multiple crystal grains having an average size of between 10 and 20 microns, and each crystal grain includes multiple crystals having an average size of at least 30 nm. This amendment clarifies that there are multiple particles having the recited crystal grain and crystal characteristics.

Therefore, the claim is definite on the issue of crystal size and crystal grain size. Because crystals form each crystal grain, each crystal may be no larger than a crystal grain. Therefore, the claimed crystal size is effectively limited not to exceed the claimed crystal grain size within the particles.

IV. Rejections under 35 U.S.C. § 103

Claims 1, 3-5, 8, 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,800,636 ("Tsukada"). The Examiner supports this rejection by stating that Tsukada teaches a soft magnetic iron powder with a particle size of 75 to 200 microns, which falls within the range of the Applicants' claims. The Examiner states that Tsukada is silent with respect to the average crystal size and the average crystal grain size and does not limit the crystal size and crystal grain size of the metal powder.

The Examiner takes the position that the properties of crystal size and crystal grain size are inherent in Tsukada and further states that based on the interpretation of claim 1, the claims require the presence of only two particles having the claimed characteristics and asserts that the claims, as written, are inconsistent regarding the crystal size and crystal grain size.

Claim 1 has been amended to recite the limitation that the crystal size is smaller than the crystal grain size within the claimed particles.

Applicants respectfully traverse the Examiner's rejection.

a. Non-obviousness in view of Examiner's Interpretation of Claim 1

Applicants respectively disagree with the Examiner's arguments that it would have been obvious to one of ordinary skill in the art to form a powder having only two particles with the recited crystal characteristics.

Claim 1, as amended, claims a powder formed of particles having the claimed characteristics. The powder clearly requires more than just two randomly introduced particles meeting the claimed characteristics. Amended claim 1 is also clear as to the

relationship between the crystal size and crystal grain size, i.e., no crystals logically can be larger than the crystal grain size. Therefore, claim 1 provides a clear basis for distinguishing over the powder taught by Tsukada.

b. Non-obviousness in view of heat treatment arguments

The Examiner further states that the previous arguments regarding the heat treatment described in Tsukada and the comparison between Tsukada's heat treatment and the present invention's heat treatment are not persuasive. The Examiner states that Tsukada teaches the consequences of employing heating temperatures below Tsukada's disclosed range. The Examiner then states that the teachings of a reference encompass all that is taught and are not limited to the preferred embodiments and that, therefore, Tsukada is considered to teach heating temperatures below the disclosed preferred range.

Applicants' previous comparison of the heating temperatures in the present invention and Tsukada showed that the two methods of creating dust cores were very different. This was based on the fact that the Applicant's present invention used a certain temperature range for the only heating step disclosed, while Tsukada disclosed a different temperature range for the first of multiple heating steps. This made the processes so different that an assumed inherency of the properties between the two final products was unreasonable.

Moreover, there are other additional steps that Tsukada teaches in the process of making the dust core that differ from the process used to prepare Applicants' claimed powder. These steps include a curing step, a compaction step and another annealing step. Thus, Tsukada does not teach a product that is produced by a process substantially

identical to that of the claimed invention. *See* MPEP 2112.01 (I). Therefore, inherency cannot be presumed.

“In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex part Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in the original). Consequently, Tsukada teaches a process that is different than the process that creates the Applicants’ present invention. Further, since a basis in fact and technical reasoning is required when inherency is invoked, a failure to provide such evidence or rationale is fatal to the reliance on this doctrine. This is only logical since evidence “must make clear” that the allegedly inherent subject matter is necessarily present in (i.e., necessarily flows from) the disclosure of cited art. *See* MPEP 2112.

A review of the Office Action reveals the absence of the required rationale or evidence at least tending to show that the claimed features of the present invention flows from the disclosures of Tsukada. In this and the July 23, 2008 Final Office Action, the Office Actions merely assert that the claimed crystal grain and crystal characteristics of the particles are inherently present in Tsukada. This cannot be said to be a development of a any reason supporting the reliance on inherency.

Applicants submit that there is no basis in fact or technical reasoning to reasonably support the assumption that Tsukada’s process, which uses different temperatures and includes additional steps, will necessarily create a composition that will realize the average crystal size and average crystal grain size claimed by Applicants’

powder. Consequently, the reliance on inherency is unsupported and improper. Therefore the burden of inherency argument falls back on the Examiner.

c. Non-obviousness in view of results of Table 1

The Examiner also notes that it is the Examiner's position that the data in Table 1 is based on pure iron powder and that the present invention encompasses any metal magnetic particles and states that Applicants' reliance on the data in Table 1 is not commensurate in scope to the claims.

Applicants note that the specification recites materials that can be used to form the metal magnetic particles including iron and iron alloys. (See Applicants' specification, page 6, lines 10-16).

The non-obviousness of a broader claimed range can be supported by evidence based on unexpected results from testing a narrower range if one of ordinary skill in the art would be able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the probative value thereof. *In re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979). In this case, the broader claimed range of "soft magnetic material" can be supported based on the unexpected results found from testing iron powder. An artisan would be able to reasonably determine a trend in the example data presented in Table 1 that shows the permeability results based on crystal and crystal grain size and use those results to reasonably extend the data into other soft magnetic materials that would be appropriate for use in the present invention.

Applicants therefore respectfully request that the rejection of claims 1, 3-5, 8, 11 and 12 under 35 U.S.C. §103(a) be withdrawn.

SUMMARY OF NEW CLAIMS

New dependent claim 13 does not add new matter and depends indirectly from allowable independent claim 1. New dependent claim 13 adds the further limitation that the soft magnetic material is iron powder. Therefore, for at least these reasons, the new claim is allowable.

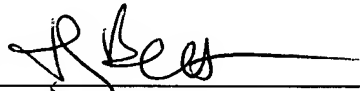
CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below once he has reviewed the proposed amendment if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

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Respectfully submitted,

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